

NQ Function - Monitor ENQs (MVS and VSE only) (Administrator)

This function allows you to monitor MVS ENQs and VSE LOCKs issued by user programs running in thread, and ENQs as a result of user program requests. It also enables you to monitor outstanding ENQs throughout the whole MVS system.

After selecting the function code NQ from the UUTIL main menu, the Online Enq Display menu is displayed:

```

14:18:15      TID      4      COM-5.1.      User JPO      05/06/97
                --- Online Enq Display Menu ---                UEN0

                Function ..... Fc
                -----
                Show System Enqs ..... SE
                Outstanding Thread Enqs ..... TE
                Please select a function ..... SE

                Major Name ....:
                Minor Name ....:

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
                End

```

Meaning of the options and parameters:

Option	Meaning
SE	Monitor ENQs in the system (System ENQs).
TE	Monitor ENQs issued by/on behalf of user programs (thread ENQs).
Major Name	This is the major name of the ENQ which you wish to monitor.
Minor Name	This is the minor name of the ENQ which you wish to monitor.

Thread ENQs / LOCKs

Depending on the specified major/minor parameter, selecting the TE subfunction results in a display of thread ENQs similar to the following:

14:19:39	TID	4	COM-5.1.	User JPO	05/06/97
			--- Outstanding Thread Enqs ---		UEN1
Function:			(List / Deq / User / Term / Thrd)		
Token 1:			(Major Name / Userid / Tid no / LU Name / Thread no.)		
Token 2:			(Minor Name)		
User-ID	LU-Name	Task-ID	S/T Major	Minor	
-----	-----	-----	-----	-----	-----
SYSUSR		THREAD1	P/E SAGCTIMO	TIMON	
SKU	DAES313	SYSTEM	M/S SYSDSN	SKU.TEST.ISAM	
JW1	SHRDAENT	SYSTEM	M/S SYSDSN	JW.COMN.SOURCE	
JPO	DAES348	SYSTEM	M/S SYSDSN	COM.SYSF.IV450.XA.LISTING	
***	END OF DATA	***			
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---					
	End	SyEnq			

You can manipulate the output by specifying a function in the *Function* field and appropriate parameters in the *Token* fields. Available functions are described below:

List (default)

This causes outstanding ENQs from thread to be displayed using the major and minor names specified in the *Token* fields to limit the extent of the display. Specify the major name as the Token 1 parameter, and the minor name as the Token 2 parameter.

Deq (MVS only)

This function enables you to DEQ an outstanding ENQ. The ENQ to be freed must be identified uniquely using the major and minor names in the *Token* fields, otherwise the request will fail. Specify the major name as the Token 1 parameter, and the minor name as the Token 2 parameter.

Note:

Invalid use of this function could effect the integrity of your system, as other users assume that they have an ENQ outstanding for a resource which the DEQ function then frees. This function should therefore only be used when you are sure that an application has abended, or has left the system without freeing the ENQ.

User

This requests a list of all outstanding ENQs for a specific user. The user ID can be specified as the Token 1 parameter.

Term

This requests a list of all outstanding ENQs issued from a specific terminal name. The terminal name or TID number must be specified as the Token 1 parameter.

Thrd

This requests to list of all outstanding ENQs issued from a specific thread. The thread number must be specified as the Token 1 parameter.

Meaning of the output fields by column heading:

Heading	Meaning
User-ID	User ID running in the thread at the time the ENQ was issued.
LU-name	Terminal name upon which the user was running when the ENQ was issued.
Task-ID	Task that the ENQ was issued for. When an ENQ occurs for a task other than a Com-plete task, the Task-ID is SYSTEM. This can occur when a user request results in a system ENQ for the whole region, for example in the case of dynamic allocation.
S/T	Scope and type of the ENQ. Possible values for the scope:
	P Step
	M System
	R Reserve
	X Systems
	Possible values for type:
	S Shared
	E Exclusive
	For more information, see the section System ENQs below.
Major	Major name.
Minor	Minor name.

Press PF3 to return to the NQ function menu.

Press PF4 to switch to the sytem ENQ overview using the specified major and minor name parameters.

System ENQs

Selecting the SE subfunction from the NQ menu, or pressing PF4 from the Thread ENQs display with the minor and major names specified, results in a display of system ENQs similar to the following:

```

14:30:44      Tid      4      COM-5.1.      User JPO      05/06/97
              --- System Enqueues ---      UQSC
more ....:
QName ...:      Refresh Time:  0      Min Waiters ...:  0
RName ...:      Mode(Char/Hex): C
Jobname .:
Trap ....:
QName      RName      Jobname      Stat Type Cnt
-----
SYSDSN
SYSVSAM
COMPLETE
SPFUSER
SYSIKJUA
ADABASLX
SPFEDIT
ADABAS
DFSOC001
SAGCTIMO
-- P = Step, M = System, X = Systems, R = Reserve, E = Exclusive, S = Shared --
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
              End      ThEnq

```

If there are more entries than will fit on one screen, the cursor is positioned in the field *more*. If all entries are shown on this screen, the cursor is positioned in the field *QName* field.

To scroll the list (cursor in field *more*), press ENTER; if there no more entries than on this screen (cursor in *Qname* field), ENTER takes you to the next information screen, see the section **Selection Modes** below;

To switch to the thread ENQs display, press PF4;

To return to the NQ menu, press PF3.

The input fields are described in the section **Selection Modes** below.

Meaning of the information fields according to column heading:

Heading	Meaning
QNAME	High-level qualifier.
RNAME	Low-level qualifier. This is the name of a resource enqueued under a given high-level qualifier (queue name).
JOBNAME	User of the listed resource.
STAT	Status of individual Rname (resource) entry: OWNS requestor is owner. WAIT requestor is waiter.
ENQ. TYPE	Scope and type of ownership by the Qname entry. Possible values for scope: P Step M System R Reserve X Systems Possible values for type: S Shared E Exclusive Example: M/E = system, exclusive. See also table below.
WAIT CNT	Wait count, that is, the number of resources that are waiting for allocation to the resource currently in use.

The abbreviations listed below the bottom line of the Systems Enqueues display indicate the possible values in the ENQ. TYPE field and describe the type of control of the resource that was requested by the active task:

Abbreviation	Explanation
P = Step	Indicates that the resource can be used only within an address space.
M = System	Indicates that the resource can be used by more than one address space.
X = Systems	Indicates that the resource can be shared between systems.
R = Reserve	Indicates that the task has exclusive control over the resource and also has a hardware reserve on the DASD volume associated with the resource.
E = Exclusive	Indicates that the task has exclusive control over the resource.
S = Shared	Indicates that if a resource is not modified while under control of a task, enqueueing requires shared status.

Selection Modes

You can select information concerning a certain queue using the input fields in the top half of the System Enqueues display.

Selecting all Entries

If you leave all fields blank, all queues currently found in the operating system are displayed:

```

14:30:44      Tid      4      COM-5.1.      User JPO      05/06/97
                        --- System Enqueues ---                      UQSC
more ....:
QName ...:      Refresh Time:  0      Min Waiters ..:  0
RName ...:      Mode(Char/Hex):  C
Jobname ..:
Trap ....:
QName      RName      Jobname      Stat Type Cnt
-----
SYSDSN
SYSVSAM
COMPLETE
SPFUSER
SYSIKJUA
ADABASLX
SPFEDIT
ADABAS
DFSOC001
SAGCTIMO
-- P = Step, M = System, X = Systems, R = Reserve, E = Exclusive, S = Shared --
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
                        End      ThEnq

```

You can place the cursor on any Qname in the list and press ENTER. This has the same effect as entering the name in the *Qname* input field: all information pertaining to this Qname is displayed (see below).

Selection by Qname

If you only know the Qname, you can enter it in the *Qname* field. When you press ENTER, all information about the specified Qname is displayed, for example:

```

14:32:54      Tid      4      COM-5.1.      User JPO      05/06/97
                        --- System Enqueues ---                      UQSC
more ....:
QName ...: COMPLETE      Refresh Time:  0      Min Waiters ..:  0
RName ...:
Jobname .:
Trap ....:
QName      RName                      Jobname  Stat  Type  Enq  Wait  Cnt
-----
COMPLETE BATCH                      COMPLETE OWNS M/E   00
                                COMPLETE OWNS M/E   00
                                TESTNAT OWNS M/E   00
                                COMPSGE OWNS X/E   00
                                COM444  OWNS M/E   00
                                COM450  OWNS X/E   00
                                SUPPORT  OWNS M/E   00

-- P = Step, M = System, X = Systems, R = Reserve, E = Exclusive, S = Shared --
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
                        End      ThEnq

```

You can place the cursor on any Rname or Jobname in the list and press ENTER. This has the same effect as entering the name in the corresponding input field: all information pertaining to the Qname with this Rname or Jobname is displayed (see below).

Selection by Rname

If you only know the Rname, you can enter it in the *Rname* field. When you press ENTER, all information about the Qname with this specified Rname is displayed, for example:

```

14:41:28      Tid      4      COM-5.1.      User JPO      05/06/97
                        --- System Enqueues ---                      UQSC
more ....:
QName ...:
RName ...: TIMON
Jobname .:
Trap ....:
QName      RName                      Jobname  Stat  Type  Enq  Wait  Cnt
-----
SAGCTIMO TIMON                      COM450  OWNS P/E   00
                                COMPSGE OWNS P/E   00
                                COM444  OWNS P/E   00

-- P = Step, M = System, X = Systems, R = Reserve, E = Exclusive, S = Shared --
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
                        End      ThEnq

```

You can place the cursor on any Jobname in the list and press ENTER. This has the same effect as entering the name in the *Jobname* input field: all information pertaining to this Jobname is displayed (see below).

Selection by Jobname

If you only know the Jobname, you can enter it in the *Jobname* field. When you press ENTER, all information about the Qname with this specified Jobname is displayed, for example:

14:43:11	Tid	4	COM-5.1.	User JPO	05/06/97
--- System Enqueues ---					UQSC
more:					
QName ...:		Refresh Time: 0		Min Waiters ..: 0	
RName ...:		Mode(Char/Hex): C			
Jobname .: COM450					
Trap:					
QName	RName	Jobname	Stat	Enq Type	Wait Cnt

SYSDSN	COM.SYSF.V45.MAPS	COM450	OWNS	M/S	00
	OPS.SYSF.V5.ADALOAD	COM450	OWNS	M/S	00
SYSVSAM	COM.SYSF.V45.VSAM.CAPTUR1.DATAUCAT.USR836...	COM450	OWNS	X/E	00
SYSDSN	COM.SYSF.IV450.XA.LOAD	COM450	OWNS	M/S	00
	COM.SYSF.IV450.ZAP.LOAD	COM450	OWNS	M/S	00
	TPF.SYSF.IV450.LOAD	COM450	OWNS	M/S	00
	PUB.SYSF.USER.LOAD	COM450	OWNS	M/S	00
	COM.SYSF.V45.USER.SOURCE	COM450	OWNS	M/S	00
SAGCTIMO	TIMON	COM450	OWNS	P/E	00
SYSDSN	COM.SYSF.V45.ROLL1	COM450	OWNS	M/S	00
-- P = Step, M = System, X = Systems, R = Reserve, E = Exclusive, S = Shared --					
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---					
End ThEnq					

Selection by Rname and Jobname

If you only know both the Rname and the Jobname, you can enter them in the corresponding fields. When you press ENTER, all information about this Rname and Jobname is displayed, for example:

14:44:15	Tid	4	COM-5.1.	User JPO	05/06/97
--- System Enqueues ---					UQSC
more:					
QName ...:		Refresh Time: 0		Min Waiters ..: 0	
RName ...: TIMON		Mode(Char/Hex): C			
Jobname .: COM450					
Trap:					
QName		RName	Jobname	Stat	Enq Wait Type Cnt

SAGCTIMO		TIMON	COM450	OWNS	P/E 00
-- P = Step, M = System, X = Systems, R = Reserve, E = Exclusive, S = Shared --					
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---					
End ThEnq					

If there are more entries than fit on the screen, the cursor is positioned in the more field. Press ENTER to scroll the list. You can manipulate the output by entering other, valid values in the input fields.

To return to the NQ menu, press PF3.

Display Modes

Rname Mode

The Rname Mode parameter displayed at the top of the System Enqueue display screen can be used to set the mode of the Rname entries for a given Qname to either character or hexadecimal format. The values permitted are:

C	Rnames are displayed in character mode.
H	Rnames are displayed in hexadecimal mode.

Note:

If you specify Mode=H, data input in the field Rname to select specific minor names also must be in hexadecimal mode (for example, if Mode=H and you wish to list enqueues for Rnames starting with SYS, input data in field Rname must be E2E8E2).

14:45:13	Tid	4	COM-5.1.	User JPO	05/06/97
			--- System Enqueues ---	UQSC	
more:					
QName ...		COMPLETE	Refresh Time: 0	Min Waiters ..:	0
RName ...				Mode(Char/Hex):	H
Jobname .:					
Trap:					
				Enq	Wait
QName	RName		Jobname	Stat	Type Cnt

COMPLETE	C2C1E3C3C8404040		COMPLETE	OWNS	M/E 00
	00D75DC8		COMPLETE	OWNS	M/E 00
	00D73B98		TESTNAT	OWNS	M/E 00
	00D79110		COM444	OWNS	M/E 00
	F8		COM450	OWNS	X/E 00
	00D74CB0		SUPPORT	OWNS	M/E 00
-- P = Step, M = System, X = Systems, R = Reserve, E = Exclusive, S = Shared --					
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---					
End		ThEnq			

Setting the Rname entry to hex mode is useful in instances in which the Rname is an address (which is shown in the Rname column only as "...." when Rname mode is set to character).

Refresh Time

The Refresh Time parameter displayed at the top of the System Enqueues display screen can be used to set the refresh rate to a one- or two-digit value specifying the time in seconds that is to pass before the System Enqueues screen is automatically redisplayed with the latest data.

The Refresh Time parameter enables you to bypass the need to keep pressing ENTER in order to see the most current status; entering a Refresh Time parameter causes the screen to be refreshed automatically regularly.

Note:

To reset the Refresh Time, interrupt the system enqueue monitor by pressing the RESET key and then press ENTER, or by pressing the ATTN key on SNA devices.

Displaying Enqueue/Dequeue Conflicts

The *Min Waiters* field can be used to set the number of resources waiting for allocation to the resource currently in use.

To search for specific enqueue conflicts, first enter precise Qname/Rname/ Jobname information in the appropriate fields on the System Enqueues display screen, or select them by placing the cursor on the desired Qname and pressing ENTER).

Set the Refresh Time and the Min Waiters parameters to the desired values and mark the Trap option with an X. (Note that the Trap option automatically sets the Refresh Time value to zero if an enqueue conflict with the given Min Waiters is encountered.)

```

14:50:46      Tid      4      COM-5.1.      User JPO      05/06/97
                --- System Enqueues ---                UQSC

more ....:
QName ...: SYSDSN      Refresh Time:  1      Min Waiters ..:  1
RName ...: COM.SYSF.IV450.XA.LOAD      Mode(Char/Hex):  C
Jobname .:
Trap ....: X
QName      RName      Jobname      Stat Type Cnt
-----
SYSDSN     COM.SYSF.IV450.XA.LOAD      COM450     OWNS M/S    01
JPOBR14    WAIT M/E    01

-- P = Step, M = System, X = Systems, R = Reserve, E = Exclusive, S = Shared --
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---
                End      ThEnq

```

The system ENQ monitor then searches for enqueue conflicts with the given criteria, and the desired information is displayed.